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IS 3481 (1966): Electric portable lamp stands and brackets
[ETD 32: Electrical Appliances]



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Indian Standard
SPECIFICATION FOR ELECTRIC
PORTABLE LAMP STANDS AND BRACKETS

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR ELECTRIC PORTABLE LAMP STANDS AND BRACKETS

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Indian Standard

SPECIFICATION FOR ELECTRIC PORTABLE LAMP STANDS AND BRACKETS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 9 March 1966, after the draft finalized by the Electrical Appliances Sectional Committee had been approved by the Electrotechnical Division Council.

0.2 Portable lamp stands and brackets are very widely used as reading lamps, table lamps, floor stands and in many other ways in houses, hotels, schools, offices, factories, etc. This standard has been prepared principally with a view to guiding the manufacture and supply of such items to ensure safety against electric shock, safety against effect of excessive temperature and fire and reliable operation. The scope of this standard is, therefore, restricted to the general and safety requirements of the electric portable lamp stands and brackets and the illumination requirements are excluded from it.

0.3 The special requirements of tropical countries like India as well as the facilities at the disposal of light electrical appliances industry in the country have also been taken into consideration while preparing this standard.

0.4 'Indian Standard general and safety requirements for household and similar electrical appliances (*fourth revision*) (IS: 302-1973)' to which references have been made in this standard with regard to general and safety requirements as well as methods of test is a necessary adjunct to this standard. Should, however, any deviation exist between the requirements of IS: 302-1973 and those of this standard, provisions of the latter shall apply.

0.5 While preparing this standard assistance has been derived from the following:

SAA C 128-1948 Approval and test specification for portable lamp standards and brackets. Standards Association of Australia.

B.S. 710: 1948 Electric reading lamps. British Standards Institution.

W-L-310a-1959 Federal specification on lights; desk (fluorescent, pedestal), Commissioner Federal Supply Service, General Services Administration, USA.

W-L-314a-1955 Federal specification on lights; household. Commissioner Federal Supply Service, General Services Administration, USA.

0.6 This standard is one of a series of Indian Standards on domestic and light electrical appliances.

0.7 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard applies to electric portable lamp stands and brackets for use on supply voltages not exceeding 250 volts, ac or dc.

1.1.1 The following are excluded from the scope of this standard:

- a) Any portable lamp stand or bracket fitted with a fluorescent or other gaseous discharge lamp, and
- b) Electric hand lamps covered by IS : 1415-1959†.

2. TERMINOLOGY

2.0 For the purpose of this standard, the definition given in 2.1 in addition to those specified in 2 of IS : 302-1973‡ shall apply.

2.1 Electric Portable Lamp Stand and Bracket — Electric lighting fittings, (other than electric hand lamps covered by IS : 1415-1959†), which may be placed on a horizontal surface or attached by spring clamps or other suitable means to vertical or inclined surfaces, and which are not intended to be permanently fixed in position, such fittings being intended for connection by flexible cords.

3. RATING

3.1 Voltage Rating — The provisions of 3.1 of IS : 302-1973‡ shall apply.

*Rules for rounding off numerical values (*revised*).

†Specification for electrical hand lamps. (*Since revised*).

‡General and safety requirements for household and similar electrical appliances (*fourth revision*).

4. MATERIALS

4.1 The relevant provisions of **7.11** and **7.12** of IS : 302-1973* in addition to **4.1.1** shall apply.

4.1.1 Cellulose nitrate and similar highly inflammable materials shall not be used in the construction of the fitting.

5. CONSTRUCTION

5.1 The relevant provisions of **7** of IS : 302-1973* in addition to those specified in **5.1.1** to **5.1.4** shall apply.

5.1.1 Inflammable shades or reflectors shall not be used in such a manner that they are liable to come into contact with any part of lamp.

5.1.2 The lamp stand shall be designed to avoid glare in the normal use.

5.1.3 Lamp Holder — The lamp holder shall be suitable for the voltage and wattage rating of the lamp used in the portable lamp stands and brackets. If of the bayonet type, it shall comply with the requirements of IS : 1258-1958†. It shall be easy to wire and shall be secured in such a manner that neither longitudinal nor circumferential movement is possible when the lamp is inserted or removed. Such fixing shall be independent of the clamping action of any detachable guard. Lamp holders having exposed metal parts shall not be used in electric lamp stands or brackets constructed of non-conducting material, but may be used on portable lamp stands and brackets provided the exposed metal of the lamp holder is in effective electrical contact with the exposed metal of the lamp stand or bracket and connected to earth.

5.1.4 Switches — Any switch provided shall open both the conductors. Switches shall be securely fixed in the body of the fitting. The switches shall pass the test specified in **8.3.4**.

6. GENERAL AND SAFETY REQUIREMENTS

6.1 Protection Against Electric Shock — The provisions of **8** of IS : 302-1973* shall apply.

6.2 Temperature Limit — The provisions of Table 3 of IS : 302-1973* shall apply.

6.3 Electrical Insulation — The provisions of **11** of IS : 302-1973* shall apply.

*General and safety requirements for household and similar electrical appliances (*fourth revision*).

†Specification for bayonet lamp holders. (Since revised).

6.4 Moisture Resistance — The provisions of **13** of IS : 302-1973* shall apply.

6.5 Stability — An electric lamp stand or bracket shall be so designed and constructed that with the lamps and shade or reflector in position with respect to the base, it shall not overturn when the base is placed on a surface inclined at an angle of 15 degrees to the horizontal.

6.5.1 The lamps stand or bracket having provision for angular adjustment of lamp with respect to base, shall conform to **6.5** when set in the upright position. Also it shall not overturn when placed on a horizontal surface and adjusted to its maximum out of balance position.

6.5.2 Any lamp stand or bracket provided with a clamp for fixing without the use of which the fitting is not capable of normal use is not covered by the requirements of **6.5** and **6.5.1**.

6.5.3 A suction pad shall not be acceptable as a mean for supporting a lamp stand or bracket in any position.

6.6 Mechanical Strength — The provisions of **15** of IS : 302-1973* shall apply.

6.7 Operational Requirement — Adjustable lamp stands shall satisfy the operational test specified in **8.3.3**.

6.8 Supply Connections — The provisions of **20** of IS : 302-1973* shall apply.

6.9 Terminals — The provisions of **21** of IS : 302-1973* shall apply.

6.10 Provisions for Earthing — The provisions of **22** of IS : 302-1973* shall apply.

6.11 Screws and Connections — The provisions of **23** of IS : 302-1973* shall apply.

6.12 Resistance to Rusting — The provisions of **7.33** of IS : 302-1973* shall apply in case of metallic lamp stands or their metallic parts.

7. MARKING

7.1 The provisions of **25** of IS : 302-1973* shall apply; the wattage marking corresponding to the highest rating of the lamp that could be used with the stand or bracket shall also be marked.

*General and safety requirements for household and similar electrical appliances (fourth revision).

7.1.1 The electric portable lamp stand or bracket may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

8. TESTS

8.1 Categories of Tests

8.1.1 Type Tests — The tests given in Table 1 shall constitute type tests and shall be carried out on five samples of electric lamp stands or brackets of the same type and model.

8.1.1.1 Criteria of acceptance — All samples shall successfully pass all the type tests for proving conformity with the requirements of this standard. If any of the samples shall fail in any of the type tests, testing authority at its discretion may call for fresh samples not exceeding twice the original number and subject them again to all tests or to the test(s) in which failure(s) occurred. No single failure shall be permitted in the repeat test(s).

8.1.2 Acceptance Tests — The following shall constitute acceptance tests:

<i>Test</i>	<i>Clause Reference</i>
a) Visual examination and inspection	8.3.1
b) Test for accessibility of live parts	40 of IS : 302-1973*
c) Operational test	8.3.3
d) High voltage test	42.3
e) Insulation resistance (dry) test	44.3
f) Test for leakage current	42.1 to 42.2
g) Test for earthing connection	38
h) Test for temperature limit	41
j) Test for moisture resistance	13
k) Test for switches	8.3.4

of IS : 302-1973*

8.1.2.1 A recommended sampling plan for acceptance tests is given in Appendix A.

8.1.3 Routine Tests — The following shall constitute routine tests:

TEST	CLAUSe REFERENCE
a) Visual examination and inspection	8.3.1

*General and safety requirements for household and similar electrical appliances (fourth revision).

b) Test for accessibility of live part	40	} of IS : 302-1973*
c) High voltage test	42.3	
d) Insulation resistance (dry) test	44.3	
e) Test for earthing connection	38	

NOTE — High voltage test, as a routine test, may be carried out as a flash test (see 42.3.3 of IS : 302-1973*).

8.2 General Conditions for Test — Unless otherwise specified in the relevant clauses the conditions specified in 26 of IS : 302-1973* shall apply.

8.3 Schedule of Tests — The schedule of type tests to be carried out on the lamp stands or brackets for proving conformity with the requirements of this standard is given in Table 1 with suitable references to relevant clauses of this standard and those of IS : 302-1973*.

TABLE 1 SCHEDULE OF TYPE TESTS

Sl. No.	TEST	CLAUSe REFERENCE
1.	Visual examination and inspection	8.3.1
2.	Stability	8.3.2
3.	Cord grip	33
4.	Cord grip	34
5.	Mechanical strength	36.1
6.	Resistance to rusting	37
7.	Protection against electric shock	40
8.	Operational test	8.3.3
9.	High voltage	42.3
10.	Insulation resistance (dry)	44.3
11.	Leakage current	42.1 to 42.2
12.	Earthing connection	38
13.	Moisture resistance	43 & 44
14.	Temperature limit	41
15.	Switches	8.3.4
16.	Creepage distances and clearances	48
17.	Screws and connections	35
18.	Fire-resisting properties	29

8.3.1 Visual Examination and Inspection — The lamp stand or bracket shall be visually examined and inspected for conformity with the relevant requirements of 4 to 7.

8.3.2 Test for Stability — The test shall be carried out in accordance with 32.2 of IS:302-1973* except that the angle of the inclined plane should be 15°. Conformity with the requirements of 6.5 also shall be checked.

8.3.3 Operational Test for Adjustable Lamp Stand — Adjustable lamp stands shall be adjusted to the maximum limit of tilting 1 000 times, after which they shall be subjected to the high voltage test and visual examination. No mechanical damage of lamp or cable insulation shall have taken place.

*General and safety requirements for household and similar electrical appliances (fourth revision).

8.3.4 Test on Switches — If the lamp stand or bracket includes a switch, the switch shall be subjected to the tests specified in Appendix B in the order mentioned therein.

APPENDIX A

(Clause 8.1.2.1)

SAMPLING PROCEDURE FOR ACCEPTANCE

A-1. LOT

A-1.1 In any consignment, all lamp stands or brackets of the same make, model and type, and manufactured under similar conditions of production shall be grouped together to constitute a lot.

A-2. SELECTION OF SAMPLE

A-2.1 From each lot, a certain number of lamp stands or brackets, as prescribed in Table 2 shall be selected, at random, and subjected to the acceptance tests specified in 8.1.2.

A-2.2 The number of lamp stands or brackets to be selected from the lot shall depend upon the size of the lot and shall be in accordance with col 2 of Table 2.

TABLE 2 SAMPLE-SIZE AND CRITERION FOR CONFORMITY

LOT SIZE	FIRST SAMPLE	SECOND SAMPLE	ACCEPTANCE NUMBER	REJECTION NUMBER
	N_1	N_2	C_1	C_2
(1)	(2)	(3)	(4)	(5)
Up to 50	5	10	0	2
51 „ 100	7	14	0	2
101 „ 200	10	20	0	3
201 „ 300	13	26	0	3
301 „ 500	20	40	1	4
501 and above	25	50	1	5

A-2.2.1 If required for repeat tests (see A-3.2), additional lamp, stands or brackets as given in col 3 of Table 2 shall also be selected at random.

A-3. CRITERION FOR CONFORMITY

A-3.1 The lot shall be considered as conforming to the requirements of acceptance tests if the number of failures in the first sample is less than or equal to acceptance number C_1 , given in col 4 of Table 2. If the number of failures is greater than or equal to the rejection number C_2 , as given in col 5 of Table 2, the lot shall be considered as not conforming to the requirements of the acceptance tests.

A-3.2 If the number of failures is between C_1 and C_2 , a further samples of N_2 lamp stands or brackets shall be selected and subjected to the acceptance tests. If the number of failures in the two samples combined is less than C_2 , the lot shall be considered as conforming to the requirements of the acceptance tests otherwise not.

APPENDIX B

(Clause 8.3.4)

TEST ON SWITCHES

B-1. HIGH VOLTAGE TEST

B-1.1 This test shall be done in accordance with **42.3** of IS : 302-1973*, test voltage being applied across the switch break.

B-2. INSULATION RESISTANCE (DRY) TEST

B-2.1 This test shall be carried out in accordance with **44.3** of IS : 302-1973*, across switch break, between the incoming and outgoing terminals.

B-3. CONTACT RESISTANCE AND TEMPERATURE RISE TEST

B-3.1 Contact Resistance and Temperature Rise Test — Switches, when new and also after the first 6 000 operations of the test for electrical endurance, shall be capable of carrying the rated current for half an hour without the voltage drop between the terminals exceeding 0.075 volt and without the temperature-rise of any part exceeding 15°C. For the purpose of this test, the switch-plate and its cover, if any, shall be in position.

*General and safety requirements for household and similar electrical appliances (fourth revision).

B-4. OVER VOLTAGE AND OVER CURRENT CAPACITY TEST

B-4.1 Switches shall be capable of making and breaking 10 times in succession at intervals of 30 seconds, a current of 1.3 times the rated value of the switch at 1.1 times the rated voltage.

B-5. ENDURANCE TEST

B-5.1 Switches shall be capable of making and breaking an electrical circuit at the rated voltage and rated current 12 000 times at regular intervals of 10 seconds per cycle of operation.

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Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 4 MARCH 1978
TO
IS: 3481-1966 SPECIFICATION FOR ELECTRIC
PORTABLE LAMP STANDS AND BRACKETS

Alterations

(*Page 5, clause 5.1.4*) — Substitute the following for the existing clause:

'5.1.4 Switches — Any switch provided shall conform to IS: 3854-1966† or IS: 4949-1968§ depending on the rating. The switch can be securely fixed on the body of the fitting or can be provided in the cord.'

[*Page 7, clause 8.1.2, item (i) (see also Amendments No. 2 and 3)*] — Delete.

[*Page 8, Table 1, Sl No. 15 (see also Amendments No. 2 and 3)*] — Delete the test and renumber the subsequent tests accordingly.

[*Page 8 (page 9 of Reprint), clause 8.3.4*] — Delete.

[*Pages 10 and 11, Appendix B (see also Amendment No. 2)*] — Delete.

Addendum

(*Page 5, foot-note with '†' mark*) — Add the following new foot-notes after '†' mark:

††Specification for switches for domestic and similar purposes.

§§Specification for 2-Amp switches for domestic and similar purposes.'

(ETDC 43)

AMENDMENT NO. 5 APRIL 1991
TO
IS 3481 : 1966 SPECIFICATION FOR ELECTRIC
PORTABLE LAMP STANDS AND BRACKETS

(*Page 4, clause 1.1.1*) — Substitute the following for the existing clause:

'1.1.1 The following are excluded from the scope of this standard:

- a) Electric hand lamps covered by IS 1415 : 1959.'

(ETD 32)

Reprography Unit, BIS, New Delhi, India